

ABSTRACT OF THE DISCLOSURE

A multi-function bundle having all of the basic support functions integrated therein can be used as a basic building block component, for example, in a fuel cell engine. The multi-function bundle is modular, easy to assemble, and able to withstand the physical and thermal shocks encountered in mobile applications. The multi-function bundle utilizes fully distributed fuel and oxidant supply systems which help to reduce temperature gradients throughout the array of fuel cells. The multi-function bundle may be comprised of a plurality of fuel cells, an oxidant supply system, a fuel supply system and a support structure which integrates the fuel cells, oxidant supply system, and fuel supply system into a single unit. The oxidant and fuel supply systems may be fully distributed. The fuel supply system may include one or more fuel feed tube assemblies which allow distributed internal fuel reformation and reduce temperature gradients throughout the array of fuel cells.